

QUARTERLY REPORT
CONCERNING
MTBE USE IN
CALIFORNIA GASOLINE

January 1 through March 31, 2002

Report to the Legislature

STAFF REPORT

May 2002
P300-02-002V1



Gray Davis, Governor

CALIFORNIA ENERGY COMMISSION

Gordon Schremp
Daryl Metz
Jeff Poteet
Principal Authors

Gordon Schremp
Project Manager

Pat Perez
Manager
**Transportation Fuel Supply
and Demand Office**

Nancy Deller
Deputy Director
Transportation Energy Division

Steve Larson
Executive Director

Quarterly Report Concerning MTBE Use in California Gasoline

January 1 through March 31, 2002

Background

Senate Bill 1001 (Burton), Chapter 814, Statutes of 1999, requires the California Energy Commission to prepare a quarterly report on the amount of methyl tertiary butyl ether (MTBE) used in California gasoline. This report summarizes the amount of MTBE each California refinery used during the preceding quarter – January 1 through March 31, 2002.

The amount of MTBE reported in this document is the quantity blended at each refinery location for use in the production of California Reformulated Gasoline (CaRFG) and intended for sale in the state. The numbers do not include any MTBE used at California refineries for the production of any type of gasoline intended for sale outside the state. In addition, several small refineries operating in the state are not included in this report because they do not produce gasoline.

MTBE, a compound containing oxygen, is an oxygenate that is used to produce gasoline in California. California refiners also use two other oxygenates, ethanol and tertiary amyl methyl ether, but in significantly smaller volumes compared to MTBE. Federal law requires California refiners to use a minimum amount of oxygen in all reformulated gasoline sold in severe and extreme ozone-nonattainment regions of the state. Those areas in California (mostly in Southern California and the Sacramento Metropolitan Area) account for over 70 percent of the gasoline used in the state.

The California Air Resources Board adopted reformulated gasoline regulations that enable refiners to produce fully complying gasoline without the use of any oxygenates. California petitioned for a waiver of the federal minimum-oxygen requirement. On June 12, 2001, the U.S. Environmental Protection Agency denied the petition. If the request to waive the federal minimum-oxygen requirement had been granted, California refiners would have been able to reduce the volume of MTBE blended into gasoline. However, until refiners complete refinery modifications, they will likely need some MTBE to help them meet desired octane levels in premium grades of gasoline and in lower concentrations in other grades to help achieve compliance with reformulated-gasoline specifications.

On March 15, 2002, Governor Gray Davis issued Executive Order D-52-02. The Order, in effect, allows California refineries up to 12 additional months for the transition from MTBE to ethanol in gasoline. Under the new timeline, the MTBE phase-out will be accomplished no later than December 31, 2003.

First Quarter 2002 Results

California refiners used 7.8 million barrels of MTBE to make CaRFG during the first quarter of 2002. This amount represents approximately 87,000 barrels per day of MTBE or 3.7 million gallons per day¹. Table 1 shows the use of MTBE by each refinery in California and total CaRFG production. Compared to the previous quarter, the total volume of MTBE used by California's refiners decreased by 1.9 percent. CaRFG production totaled 86.5 million barrels in the fourth quarter of 2001 and 85.1 million barrels in the first quarter of 2002, for a 1.7 percent decrease. The 1.9 percent decrease in the use of MTBE and the 1.7 percent decrease in gasoline resulted in the average concentration of MTBE falling slightly from 9.25 percent in the fourth quarter of 2001 to 9.22 percent in the first quarter of 2002--essentially remaining constant.

Figure 1 illustrates the concentration of MTBE used in California's gasoline for each of the quarters during the period of 2000 through the first quarter of 2002. The concentration of MTBE decreased sharply in the first quarter of 2001 and modestly in the second quarter of 2000 and the fourth quarter of 2001. The sharp drop in concentration of MTBE during the first quarter of 2001 was due to the combined factors of a significant reduction in MTBE use by Tosco Corp.² and the higher relative price of MTBE compared to CaRFG over the previous quarter. The drop in concentration of MTBE during the second quarter of 2000 and the fourth quarter of 2001 is primarily a result of economic factors, the higher price of MTBE relative to CaRFG.

Figure 2 compares the average quarterly spot price of CaRFG to the spot price for MTBE. The chart indicates that not only the prices of MTBE and CaRFG vary, but also the relative difference between these prices varies. The changing relative prices lead to the changing economic incentives to increase or decrease the concentration of MTBE within required blending limits. During the first, third, and fourth quarters of 2000 and the third quarter of 2001 the price of MTBE was low relative to CaRFG and refiners had a greater incentive to use MTBE. During the second quarter of 2000 and the first and fourth quarters of 2001, MTBE was relatively expensive and refiners had a greater incentive to decrease the use of MTBE.

¹ A barrel is equivalent to 42 U.S. gallons.

² The Tosco Corporation was acquired by Phillip Petroleum Company on September 19, 2001.

Table 1
California MTBE Use By Refinery Location

Refiner	California Location	MTBE Use This Quarter 1 st Qtr – 2002 (Thous. Of Barrels)	MTBE Use This Quarter 4 th Qtr – 2001 (Thous. Of Barrels)	Change From Previous Quarter (Percent)
BP ³	Carson	1,887	2,126	-11%
ChevronTexaco	El Segundo	1,234	1,120	10%
ChevronTexaco	Richmond	284	301	-6%
ExxonMobil ⁴	Torrance	878	740	19%
Kern Oil	Bakersfield	85	90	-6%
Phillips ⁵	Los Angeles	68	169	-60%
Phillips ⁶	Rodeo	0	0	0%
Shell ⁷	Bakersfield	231	229	1%
Shell ⁸	Los Angeles	594	611	-3%
Shell ⁹	Martinez	638	518	23%
Valero ¹⁰	Avon	381	423	-10%
Valero ¹¹	Wilmington	695	667	4%
Valero ¹²	Benicia	871	1,006	-13%
State Refinery MTBE Totals		7,846	8,000	-1.9%
State CaRFG Production		85,089	86,523	-1.7%
Statewide Average MTBE Content		9.2%	9.2%	0%

Source: California Energy Commission form number Q1001

³ BP Amoco merged with ARCO to form BP. Prior to the merger this refinery was known as the ARCO – Carson refinery.

⁴ Exxon and Mobile merged 7/2000 to become ExxonMobil. This refinery was known the Mobil-Torrance refinery prior to the merger.

⁵ Phillips Petroleum Co. acquired the Tosco Corp. 9/2001. This refinery was known as the Tosco – Los Angeles refinery prior to the purchase.

⁶ Phillips Petroleum Co. acquired the Tosco Corp. 9/2001. This refinery was known as the Tosco – Rodeo refinery prior to the purchase.

⁷ Shell Oil Products acquired this refinery along with all of Equilon's western US refineries 3/2002. Equilon was a joint venture formed by Texaco and Shell 4/2000. Prior to the Equilon joint venture, the refinery was operated solely by Texaco and known as the Texaco – Bakersfield refinery.

⁸ Shell Oil Product acquired this refinery along with all of Equilon's western US refineries 3/2002. Equilon was a joint venture formed by Texaco and Shell 4/2000. Prior to the Equilon joint venture, the refinery was operated solely by Texaco and known as the Texaco – Los Angeles.

⁹ Shell Oil Products acquired this refinery along with all of Equilon's western US refineries 3/2002. Equilon was a joint venture formed by Texaco and Shell 4/2000. Prior to the Equilon joint venture, the refinery was operated solely by Shell and known as the Shell – Martinez refinery.

¹⁰ Valero merged with Ultramar Diamond Shamrock (UDS) 12/2001. This refinery was known as the UDS– Avon or Golden Eagle refinery prior to the merger. UDS is operating the refinery independently pending completion of the sale to Tesoro Petroleum.

¹¹ Valero merged with Ultramar Diamond Shamrock (UDS) 12/2001. This refinery was known as the UDS-Wilmington refinery prior to the merger.

¹² Valero purchased this refinery from ExxonMobil 5/2000. The refinery was known as the ExxonMobil – Benicia refinery prior to the purchase.

Figure 1
California Gasoline
MTBE Concentration

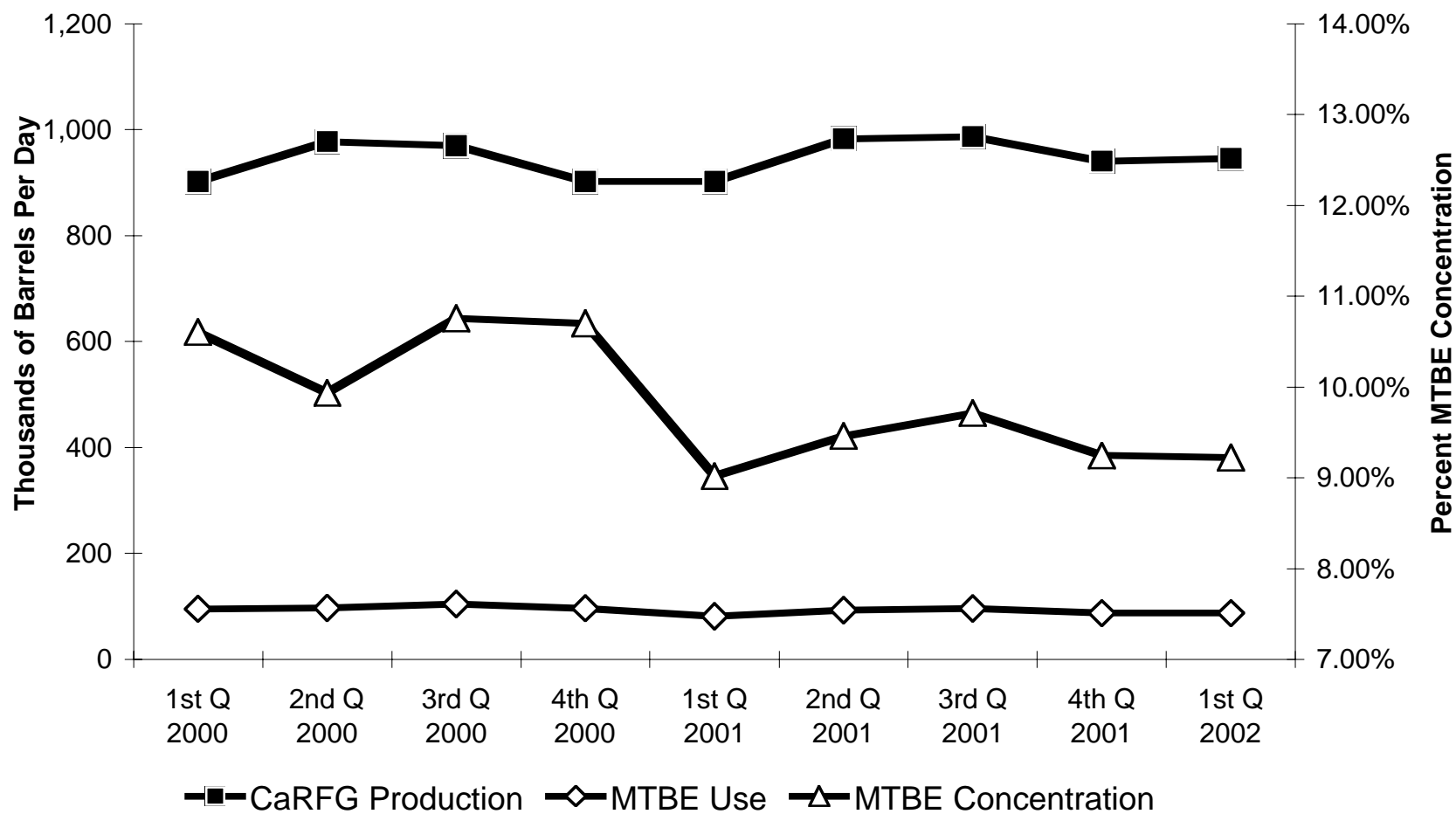
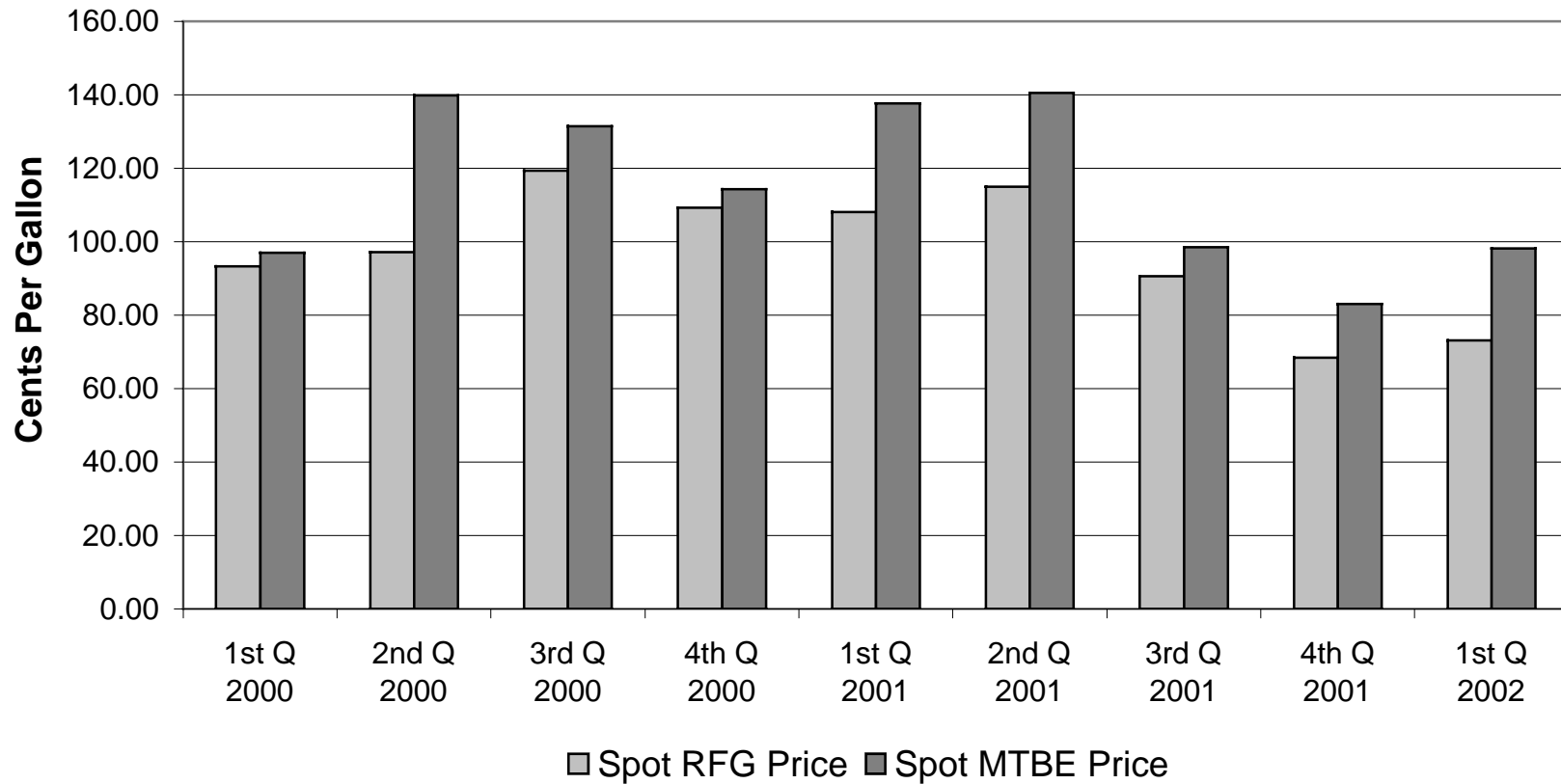


Figure 2
CaRFG vs. MTBE Spot Prices
Los Angeles



Source: California Energy Commission derived averages from Oil Price Information Service daily west coast spot market reports.